

REMARKS

Reconsideration of the above-identified patent application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-10 are in this case. Claims 1-10 have been rejected under § 103(a). Independent claim 1 has been amended. New claim 11 has been added.

The claims before the Examiner are directed toward a method of facilitating the handoff of a mobile unit from one base station of a wireless communication system to another base station of the system. The old base station sends directly to at least one candidate new base station information about the connection with the mobile unit. The information includes a rough TOD (time-of-day) and a device address of the mobile unit. The mobile unit does not participate in the sending of the information. In particular, the sending of the information is independent of the strength of the signals received by the old base station from the mobile unit. Each candidate base station receives the information, generates a list of frequencies at which the mobile unit is likely to transmit, and checks for a signal transmitted by the mobile unit.

§ 103(a) Rejections – Haartsen '332 in view of Han '089

The Examiner has rejected claims 1-10 under § 103(a) as being unpatentable over Haartsen, US Patent No. 6,009,332 (henceforth, "Haartsen '332") in view of Han, US Patent No. 6,321,089 (henceforth, "Han '089"). The Examiner's rejection is respectfully traversed.

Haartsen '332 teaches a method of operating a local, private radio communication system that uses the same frequencies as a cellular network within which the private system is located. The private system includes a base station 20 and

a mobile terminal 26. Base station 20 first selects a set of candidate frequencies to use, based on long-term monitoring of the activity of the cellular network. Before actually communicating, base station 20 performs short-term monitoring of local activity at the candidate frequencies to determine the actual frequency to use.

Haartsen '332 is almost silent on the subject of the how terminal 26 is handed off from one base station 20 to another base station 20. Essentially all that Haartsen '332 says on this subject is column 6 lines 32-34:

...conventional communications and handoff protocols may be used with the present invention, and need not be described further herein.

All subsequent references to handoff ("handover") in Haartsen '332 (column 10 lines 35-45, column 11 lines 24-35, column 14 lines 11-15) refer only to circumstances under which handoff is desirable or impossible, but not to the method of handoff.

Han '089 teaches a method of handing off a mobile station 1 from one base station 2 to another base station 3 or 4. When the strength of the signals received by base station 2 from mobile station 1 falls below a threshold S_{T1} , base station 2 initiates handoff by informing a call control processor 11 of that fact. Call control processor 11 then instructs base stations 3 and 4 to start checking for signals received from mobile station 1.

Han '089 is silent about when base stations 3 and 4 receive the information about the connection between mobile station 1 and base station 2 that base stations 3 and 4 need to check for signals received from mobile station 1. As best understood, when call control processor 11 instructs base stations 3 and 4 to start checking for signals received from mobile station 1, call control processor 11 also sends base stations 3 and 4 the information about the connection between mobile station 1 and base station 2 that base stations 3 and 4 need to check for signals received from mobile station 1.

By contrast, according to the present invention, a base station that is connected with a mobile unit sends information about the connection to the base stations that are candidates for handoff independently of the strength of the signal that that base station receives from the mobile unit. It is not obvious from Han '089, alone or in combination with Haartsen '332, that this information should be sent to the handoff candidates until, based on the strength of the signal received by the base station from the mobile unit, handoff is imminent.

Independent claim 1 now has been amended to recite this distinction between the present invention and the prior art cited by the Examiner. Support for this amendment is found in the specification in Figures 9A and 9B and the accompanying text. Figure 9A shows a communication session between Base Station 123 and handset 121 before handoff. As described on page 30 lines 7-13,

The "current" Base Station" 123 sends call parameters and rough synchronization information over the LAN 140 to the neighboring Base Stations, a one of which is shown as Base Station #2 124. In this manner, the neighboring Base Stations "know" that they are "candidate" Base Stations for receiving a handoff of the call from the current Base Station. The information which is broadcast by the current Base Station to the candidate next Base Stations includes low-level communications protocol states and parameters...

Handset 121 is shown in communication range only of Base Station 123, so that the strength of the signals received by Base Station 123 from handset 121 is not so low as to trigger a handoff.

Figure 9B shows the start of a handoff of handset 121 from Base Station 123 to Base Station 124. As described on page 30 lines 19-21,

Figure 9B illustrates a handoff as it is about to take place. Here, the handset 121 is situated in an area covered by both Base Stations 123 and 124. Base Station 124 uses this situation to achieve exact (fine) synchronization with the current Base Station 123. (emphasis added)

There is no need at this point in time for Base Station 123 to send the call parameters and the rough synchronization information that Base Station 124 needs to achieve fine synchronization with handset 121, because Base Station 123 has already sent Base Station 124 this information while handset 121 was in communication range only of Base Station 123.

Amended independent claim 1 now features language which makes it absolutely clear that the Base Station connected with the mobile unit sends information about the connection to one or more neighboring Base Stations independently of the strength of the signals that the connected Base Station receives from the mobile unit. Applicant believes that the amendment of the claims completely overcomes the Examiner's rejections on § 103(a) grounds.

With independent claim 1 in condition for allowance in its present form, it follows that claims 2-10, that depend therefrom, also are in condition for allowance.

New Claim

New claim 11 has been added.

New claim 11 is independent claim 1, as amended in response to the first Official Action, and further amended to recite a second distinction between the present invention and the prior art cited by the Examiner, to wit, that the Base Station connected with the mobile unit provides the information about the connection directly to the neighboring Base Station(s). Support for new claim 11 is found in the specification *inter alia* in Figure 9A as described on page 30 lines 7-8:

The "current" Base Station" 123 sends call parameters and rough synchronization information over the LAN 140 to the neighboring Base Stations (emphasis added)

rather than via Switch 129 that is the counterpart in the preferred embodiment of the present invention of call control processor 11 of Han '089. Note that the rough TOD

and the device address, that are specifically recited in claim 11 as being included in the information about the connection, are parameters of the instance of the low-level communications protocol that is used by Base Station 123 to manage the connection with handset 121. As shown in Figures 8A and 8B, all the instances (280, 281, 281') of the low-level communications protocol reside only in the Base Stations (123 and 124), and not in Switch 129.

In view of the above amendments and remarks it is respectfully submitted that independent claims 1 and 11, and hence dependent claims 2-10 are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,

Mark M. Friedman
Attorney for Applicant
Registration No. 33,883

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